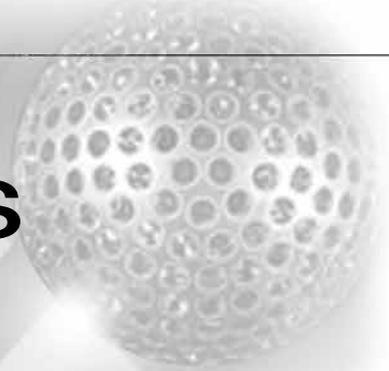

SECTION 2

ABOUT THE ILRS



SECTION 2

ABOUT THE ILRS

Michael Pearlman/CfA

THE MISSION OF THE ILRS

The International Laser Ranging Service (ILRS) organizes and coordinates Satellite Laser Ranging (SLR) and Lunar Laser Ranging (LLR) to support programs in geodetic, geophysical, and lunar research activities and provides the International Earth Rotation Service (IERS) with products important to the maintenance of an accurate International Terrestrial Reference Frame (ITRF). This reference frame provides the stability through which systematic measurements of the Earth can be made over thousands of kilometers, decades of time, and evolution of measurement technology. The Service provides precision ephemerides to support active Earth sensing missions and is now preparing to support extraterrestrial missions with optical transponders. The ILRS is one of the technique services of the International Association of Geodesy (IAG).

THE ROLE OF THE ILRS

The International Laser Ranging Service (ILRS):

- coordinates activities for the international network of SLR stations;
- develops the standards and specifications necessary for product consistency;
- develops the priorities and tracking strategies required to maximize network efficiency;
- collects, merges, analyzes, archives and distributes satellite and lunar laser ranging data to satisfy user needs;
- provides quality control and engineering diagnostics to the global network;
- works with new satellite missions in the design and building of retroreflector targets to maximize data quality and quantity;
- works with science programs to optimize scientific data yield; and
- encourages the application of new technologies to enhance the quality, quantity, and cost effectiveness of its data products;

ILRS Data Products

Official Submission to the IERS

- Weekly solutions for station coordinates and Earth Orientation Parameters (EOPs) for the derivation of scale (Gm) and time-varying Earth Center of Mass for the ITRF

Other User Products

- Static and time-varying coefficients of the Earth's gravity field
- Accurate satellite ephemerides for POD and validation of altimetry, relativity, and satellite dynamics
- Backup POD for other missions
- Lunar ephemeris for relativity studies and lunar libration for lunar interior studies

THE STRUCTURE OF THE ILRS

The ILRS is composed of the following components, shown in Figures 2-1 and 2-2:

- Forty Satellite Ranging Stations that provide ranging data on an hourly basis and two Lunar Ranging Stations;
- Three Operations Centers that collect and verify the satellite data and provide the Stations with sustaining engineering, communications links, and other support;
- Two Global Data Centers that receive and archive data and supporting information from the Operations Centers and provide these data to the Analysis Centers; and receive and archive ILRS scientific data products from the Analysis Centers and provide them to the users;
- Two Combination Centers that prepare the ILRS weekly data product for the IERS; six SLR Analysis Centers that provide the input solutions to the Combination Centers for the data product process, eighteen Associate Analysis Centers that provide specialized SLR products to the users community and provide a second level of data quality assurance in the network; and four Lunar Analysis Centers that provide lunar data products;
- Five ILRS Working Groups that provide technical expertise and help formulate policy;
- ILRS Central Bureau that is responsible for the daily coordination and management of ILRS activities including communications and information transfer, monitoring and promoting compliance with ILRS network standards, monitoring network operations and quality assurance, maintaining documentation and databases, and organizing meetings and workshops
- Governing Board which is responsible for general direction, defining official ILRS policy and products, determining satellite-tracking priorities, developing standards and procedures, and interacting with other services and organizations

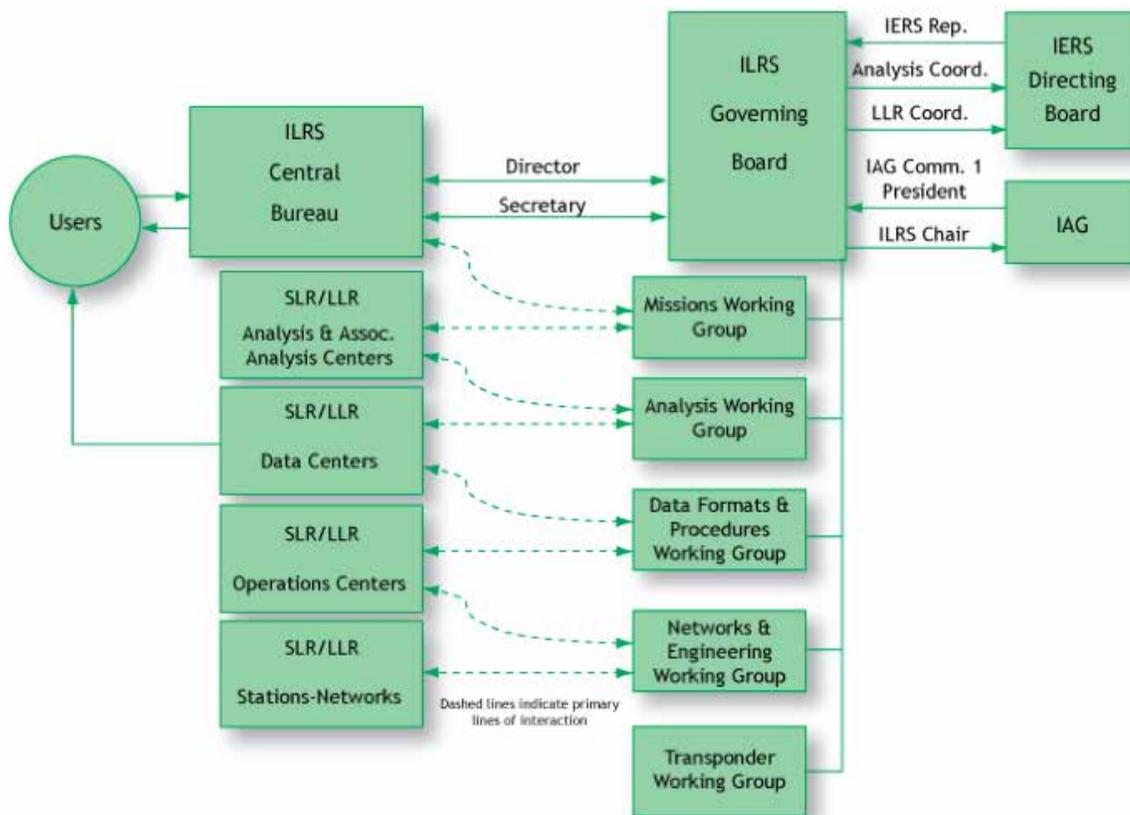


Figure 2-1. ILRS Organization

ILRS GOVERNING BOARD



Name: Zuheir Altamimi
Position: Ex-Officio,
President of IAG
Commission 1
Affiliation: Institut
Géographique National,
France

Name: Jan McGarry
Position: NASA Network
Representative
Affiliation: NASA
Goddard Space Flight
Center, USA



Name: Graham Appleby
Position: Chairman and
At-Large Representative
Affiliation: Natural
Environmental Research
Center (NERC) Space
Geodesy Facility
(NSGF), UK

Name: Horst Müller
Position: Data Center
Representative
(replacing W.
Seemueller in 11/2010)
Affiliation: Deutsches
Geodätisches
Forschungsinstitut
(DGFI), Germany



Name: Giuseppe Bianco
Position: EUROLAS
Network Representative
Affiliation: Agenzia
Spaciale Italiana (ASI),
Italy

Name: Jürgen Müller
Position: Lunar
Representative
Affiliation: U. of
Hannover/Institut
für Erdmessung (IFE),
Germany



Name: David Carter
Position: NASA Network
Representative
Affiliation: NASA
Goddard Space Flight
Center, USA

Name: Carey Noll
Position: Ex-Officio,
Secretary, ILRS Central
Bureau
Affiliation: NASA Goddard
Space Flight Center,
USA



ILRS GOVERNING BOARD (CONTINUED)



Name: Yang Fumin
Position: WPLTN Network Representative
Affiliation: Shanghai Observatory, China

Name: Erricos Pavlis
Position: Analysis Center Representative
Affiliation: Joint Center for Earth Systems Technology (JCET) and Goddard Space Flight Center (GSFC), USA



Name: Ramesh Govind
Position: WPLTN Network Representative
Affiliation: Geoscience Australia, Australia

Name: Michael Pearlman
Position: Ex-Officio, Director, ILRS Central Bureau
Affiliation: Harvard-Smithsonian Center for Astrophysics (CfA), USA



Name: Georg Kirchner
Position: At Large Representative
Affiliation: Austrian Academy of Sciences, Austria

Name: Francis Pierron
Position: EUROLAS Network Representative
Affiliation: Observatoire de la Cote d'Azur, France



Name: Vincenza Luceri
Position: Analysis Center Representative
Affiliation: e-GEOS S.p.A., Italy

Name: Bob Schutz
Position: IERS Representative to ILRS
Affiliation: Center for Space Research (CSR), University of Texas, USA



ILRS CENTRAL BUREAU

The Central Bureau, CB, is responsible for the daily coordination and management of the ILRS in a manner consistent with the directives and policies established by the Governing Board. The primary functions of the CB are to facilitate communications and information transfer within the ILRS and between the ILRS and the external scientific community, coordinate ILRS activities, maintain a list of satellites approved for tracking support and their priorities, promote compliance to ILRS network standards, monitor network operations and quality assurance of data, maintain ILRS documentation and databases, produce reports as required, and organize meetings and workshops.

The CB coordinates and publishes all documents required for the satisfactory planning and operation of the Service, including standards/specifications regarding the performance, functionality and configuration requirements of all elements of the Service including user interface functions.

The CB operates the communication center for the ILRS. It maintains a hierarchy of documents and reports, both hard copy and electronic, including network information, standards, newsletters, electronic bulletin board, directories, summaries of ILRS performance and products, and an Annual Report.

In summary, the Central Bureau performs a long-term coordination and communication role to ensure that ILRS participants contribute to the Service in a consistent and continuous manner and that they adhere to ILRS standards.